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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT BOSCH GmbH

Appeal 2008-3887
Application 09/965,776
Technology Center 3600

Decided: November 06, 2008

Before JAMESON LEE, RICHARD TORCZON, and SALLY C.
MEDLEY, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is a decision on appeal by the real party in interest, Robert Bosch GmbH (RBG), under 35 U.S.C. § 134(a) from a final rejection of claims 1, 3, 5, 7, 8, and 10. We have jurisdiction under 35 U.S.C. § 6(b).

References Relied on by the Examiner

Yano

6.332.654

Dec. 25, 2001

The Rejections on Appeal

The Examiner rejected claims 1, 3, 5, 7, 8, and 10 under 35 U.S.C. § 102(e) as anticipated by Yano.¹

The Invention

The invention relates to a method and device for controlling a wheel brake of a motor vehicle. (Spec. 1:2-3.)

Claim 1 is reproduced below (Claim App'x 1:1-10):

1. A method of controlling a wheel brake of a vehicle, an electrically operated actuator being assigned to the wheel brake and being drivable by an actuation signal as a function of a setpoint to generate at least one of a braking force and a braking pressure, the method comprising:

determining a desired braking input based on at least one of a brake pedal operation and at least one other control system; and

applying the at least one of the braking force and the braking pressure as a function of the desired braking input;

wherein the applied at least one of the braking force and the braking pressure is limited to a maximal value when the vehicle is at a standstill.

¹ In the Examiner's Answer, the Examiner has withdrawn the rejection of claims 1, 3, 7, 8, and 10 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,053,584 to Schunck et al. That rejection is no longer on appeal.

B. FINDINGS OF FACT

1. Yano discloses a grade-holding brake system for keeping a vehicle stopped after the vehicle has halted. (Yano 1:7-9.)
2. In Yano, a target value is determined for the braking pressure of each of a vehicle's wheel cylinders that provides sufficient braking for the vehicle to remain at a standstill. (Yano 10:17-24.)
3. In Yano, braking pressure is controlled such that when an actual applied braking pressure is below the target value, a pressure booster valve 14 and pressure booster pump 15 operate to increase the pressure to the target value. (Yano 9:30-42.)
4. Yano further discloses that in the event the actual applied braking pressure is above the target value, a holding operation is commenced that maintains the elevated braking pressure until the brakes are released. (Yano 10:49-64; 2:37-40.)
5. In Yano, the actual braking pressure can exceed the target value.
6. A person of ordinary skill in the art would have readily understood that a braking system, such as that of Yano, will have a physical limit beyond which no further braking can be accomplished.

C. ANALYSIS

Claims 3, 5, 7, and 10 are argued collectively with claim 1. Claim 8 is separately argued.

Claims 1, 3, 5, 7, and 10

The Examiner rejected claims 1, 3, 5, 7, and 10 as anticipated by Yano. To establish anticipation under 35 U.S.C. § 102, each and every

element in a claim, arranged as is recited in the claim, must be found in a single prior art reference. *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). Anticipation can be found when a claim limitation is inherent or otherwise implicit in the relevant reference. *Standard Havens Products, Inc. v. Gencor Industries, Inc.*, 953 F.2d 1360, 1369 (Fed. Cir. 1991).

We focus on the disputed limitations. RBG disputes that Yano meets the limitation of claim 1 that “the applied at least one of the braking force and the braking pressure is limited to a maximal value when the vehicle is at a standstill.” (Claims App’x 1:9-10.)

The Examiner found that all the limitations of the claims including the above-quoted limitation are satisfied by Yano. The Examiner took two approaches in addressing that limitation.

The Examiner first found that the limitation is satisfied by Yano’s ZPtarget value. According to the Examiner, that target value is an upper limit to the braking pressure applied to a vehicle’s wheels. (Ans. 5:1-3; Advisory Action January 7, 2004.)

RBG argues that the target pressure value disclosed in Yano is not a maximal value for the applied braking pressure at the vehicle’s wheels because that actual braking pressure applied can exceed the target value. RBG further argues that as the target value is exceeded, Yano does not disclose limiting the braking pressure to that target value.

We agree with RBG. Yano discloses that a target value is determined for the braking pressure of each of a vehicle’s wheel cylinders that provides sufficient braking for the vehicle to remain at a standstill. (Yano 10:17-24.) Braking pressure is controlled such that when an actual applied braking

pressure is below the target value, a pressure booster valve 14 and pressure booster pump 15 operate to increase the pressure to the target value. (Yano 9:30-42.) However, in the event the actual applied braking pressure is above the target value, a holding operation is commenced that maintains the elevated braking pressure until the brakes are released. (Yano 10:49-64; 2:37-40.) Because the actual braking pressure can exceed the target value, Yano does not disclose limiting the braking pressure to that target value. The target value does not satisfy the claim limitation relating to a maximal value to which braking pressure is limited.

The Examiner's second approach is based on a finding that all brake systems, including Yano's system, are intrinsically limited to some level due to physical constraints. In other words, all braking systems have an upper bound for the braking pressure produced.

RGB disputes that the physical maximum possible braking pressure of Yano's braking system satisfies the claim limitation. According to RGB (Reply Br. 4:11-24):

However, this contention is not valid because what is claimed is not a limiting of a possible braking pressure, but instead a limiting of a desired braking pressure that is actively determined by a braking system as a function of a brake pedal input and other control systems. That is, a theoretically possible brake pressure, which may indeed be inherently limited for all braking systems, is not actively determined by braking systems, and is therefore not akin to the desired braking pressure which is subsequently limited in the present claims. For example, even though any brake system may have a theoretical maximum braking pressure it can apply, braking pressure commands beyond this limit are not generated by the system and subsequently reduced to values below this maximum theoretical limit.

Those arguments are misplaced. Claim 1 does not require that a “desired braking pressure” be limited to any maximal value. Indeed, it does not even mention “desired braking pressure.” The claim also does not require that the applied braking pressure be either “actively determined” or “reduced to” the maximal value. Rather, the claim simply requires that a braking pressure is applied as a function of a desired braking input. That applied braking pressure then has some maximal value to which it is limited. During examination, claim terms are given their broadest reasonable interpretation consistent with the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

In Yano, a braking system includes a controller that produces an applied braking pressure to the wheels based on a desired braking. (Yano 1:51 to 2:2.) A person of ordinary skill in the art would have readily understood that a braking system, such as that of Yano, will have a physical limit beyond which no further braking can be accomplished. That maximum physical limit is reasonably considered a maximal value, which, by its very nature as an utmost physical limit, will never be exceeded. Thus, as Yano’s applied braking force cannot exceed that maximal value, it is necessarily limited to that value. RBG’s specification is not inconsistent with the interpretation of the “maximal value” of a braking pressure as including the maximum physical braking pressure that can be generated by a braking system.

Moreover, RBG’s claim 1 does not require that the maximal value for the braking force be any particular value, such as one that is only that necessary to keep the vehicle stopped. The claim simply recites “a maximal value.” During the examination process an applicant has the opportunity

and responsibility to remove any ambiguity in claim meaning by making an amendment. *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004). If RBG had intended the claim scope to be restricted to a particular maximal value, it could have amended the claims accordingly. We reject RBG's argument that Yano does not satisfy the claim limitation relating to a braking force that is limited to a maximal value.

We further note that the claim limitation has yet another interpretation. When a variable is "limited to" a value, that can mean that the variable is confined to be the specified value at all times. Thus, a braking force that is "limited to a maximal value" can mean that the braking force is required to always be that single maximal value regardless of the desired input. We, however, decline to take that interpretation because it is the narrowest interpretation of all. The broadest reasonable interpretation is that which we have discussed above.

For all the foregoing reasons, we find that RBG has not shown error in the Examiner's rejection of claims 1, 3, 5, 7, and 10 over Yano.

We sustain the rejection of claims 1, 3, 5, 7, and 10 under 35 U.S.C. § 102(e) as anticipated by Yano.

Claim 8

Claim 8 is dependent on claim 1 and adds the additional limitation "wherein a limit value is based on at least one wheel brake not being braked."

In rejecting claim 8, the Examiner alleged (Ans. 4:13-15):

Re-claim 8, a limit value is based upon at least one wheel not braked, as such any vehicle speed value detected by the controller while the vehicle is in a standstill condition is not corrupted by a braking pressure at that wheel.

RBG argues that the Examiner's statement cannot form a proper basis for rejecting claim 8 because no limitation of the claim requires corruption or lack of corruption of a detected speed value by a braking pressure present at a wheel. RBG contends that the limit value limitation of claim 8 requires that the maximal value be calculated based on braking by less than the total number of wheel brakes in the system and that the limitation has not been shown as present in Yano. (Reply Br. 5:12-15.)

The limit value required by claim 8 is based on at least one of a vehicle's wheels not being braked. We do not see how the Examiner's above-quoted reasoning establishes anticipation of the limit value limitation of claim 8. The reasoning is not understood and fails to meaningfully address the limitation at issue. The Examiner has not pointed us to any portion of Yano disclosing that "a limit value is based on at least one wheel brake not being braked."

We do not sustain the rejection of claim 8 under 35 U.S.C. § 102(e) as anticipated by Yano.

D. Conclusion

The rejection of claims 1, 3, 5, 7, and 10 under 35 U.S.C. § 102(e) as anticipated by Yano is affirmed.

The rejection of claim 8 under 35 U.S.C. § 102(e) as anticipated by Yano is reversed.

AFFIRMED-IN-PART

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Kenyon & Kenyon LLP
One Broadway
New York NY 10004